SONY

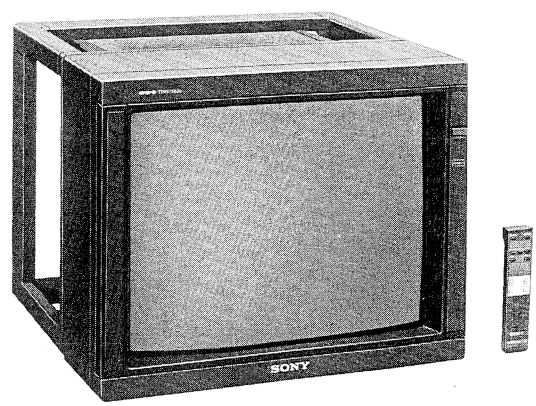
4-482-400-13 (4)

TRINITRON® COLOR VIDEO MONITOR

PVM-2130QM
PVM-2730QM

OPERATING INSTRUCTIONS page 2

Before operating the unit, please read this manual thoroughly and retain it for future reference.



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English

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Dangerously high voltages are present inside the unit. Do not open the cabinet.

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OUTLINE

High-resolution picture
The Fine Pitch Trinitron picture tube gives a high resolution (composite: 420 TV lines, S video: 560 TV lines RGB: 2000 characters) picture.

4 color systems available
PAL, SECAM, NTSC or $NTSC_{4.43}$* color system can be selected automatically and the selected color system indicator illuminates.

Analog and digital RGB inputs
Analog RGB signals can be input through the 21-pin AV connector, and digital RGB signals can be input through the 9-pin DIGITAL connector. These inputs allow connection of microcomputers. By connecting a microcomputer with an intensity output to the DIGITAL connector, 16-color display is possible.

Superimposition
The data from the microcomputer connected to the AV connector can be superimposed on the picture from the LINE A, LINE B or VTR input.

S VIDEO connector
The video signal from a VTR is composed of the chrominance (C) signal and the luminance signal (Y). In a composite video signal, these two signals are combined, which reduces the video quality because the combined signals tend to interfere with each other. However, when input to the S VIDEO connector instead of the BNC connectors or VTR connector, the composite video signal is split into its component signals, thus eliminating the problem of interference and assuring the video quality.

Powerful sound
The powerful hi-fi sound (PVM-2130QM: 7 W + 7 W, PVM-2730QM: 15 W + 15 W, at 8 ohms) is obtained through the 2-way speakers (optional).

Touch panel control
When adjustment is needed, an orange indicator on the touch panel controller lights up.

Control S
The CONTROL S signal allows remote control of several monitors and a VTR through a single monitor.

* A signal of $NTSC_{4.43}$ system is obtained by playing back NTSC-recorded video tapes with a video tape recorder/player specially designed for use with this system.

PRECAUTIONS

On safety

- Check that the operating voltage of your unit is identical with the voltage of your local power supply.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- To disconnect the AC power cord, pull it out by the plug. Never pull the cord itself.

On installation

- Allow adequate air circulation to prevent internal heat build-up.
  Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

On cleaning

To keep the unit looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since these will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

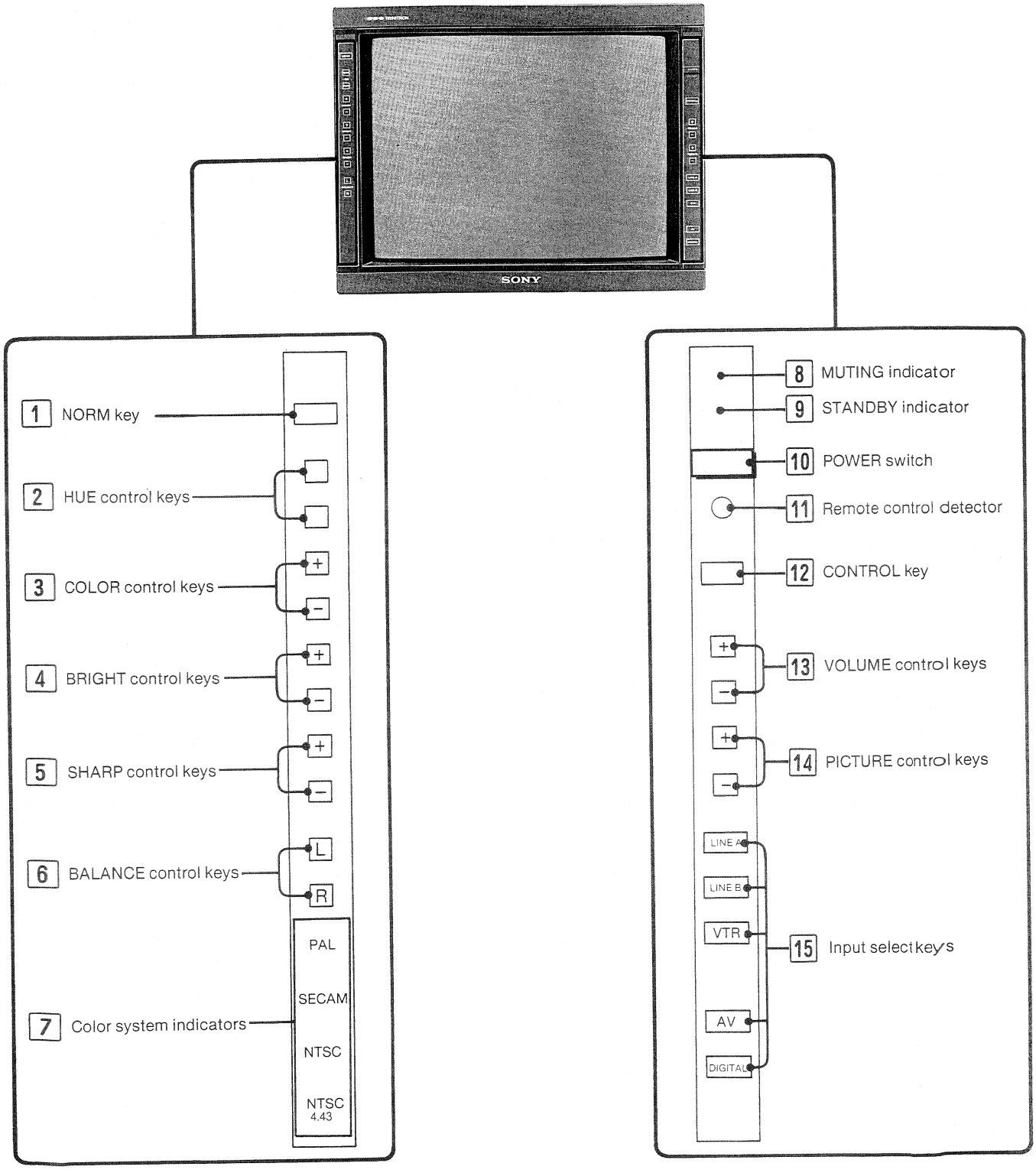
On repacking

Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

If you have any questions about this unit, contact your authorized Sony dealer.

LOCATION AND FUNCTION OF PARTS AND CONTROLS

FRONT PANEL



• Press CONTROL key after power is turned on to illuminate the control keys or indicators.

The following control keys are effective only when MANUAL CONTROL switch on the rear panel is set to ON .

[1] **NORM (normal) key**
Press this key to return to the standard setting.
• This key is effective only for the control keys on the left.

[2] **HUE control keys**
Press the GRN (green) key to make the skin tones greenish or the PUR (purple) key to make it purplish.
• These control keys are effective for the NTSC and $NTSC_{4.43}$ color systems only.

[3] **COLOR control keys**
Press the + key to make the color intensity vivid or the – key to make it pale.

[4] **BRIGHT (brightness) control keys**
Press the + key to make the picture brighter or the – key to make it darker.

[5] **SHARP (sharpness) control keys**
Press the + key to obtain a sharp picture or the – key to obtain a soft picture.

[6] **BALANCE control keys**
Press the L key to increase the sound volume of the left speaker or the R key to increase the sound volume of the right speaker.

[7] **Color system indicators**
PAL, SECAM, NTSC, $NTSC_{4.43}$
The color system of the input signal is automatically selected and the corresponding indicator illuminates. When the input signal is monochrome, no color system indicator illuminates.

[8] **MUTING indicator**
Illuminates while the sound is muted.
• Muting is controlled only by the Remote Commander.

[9] **STANDBY indicator**
Illuminates when the power is turned off by the Remote Commander.

[10] **POWER switch**
Press this switch to turn the monitor on.
Press this switch again to turn it off.
• When the monitor is turned on, the settings of the monitor are the same as when it was last turned off.
• For a few seconds after turning on the monitor the color of picture may vary because the white balance is adjusted at this time. This is not a problem.

[11] **Remote control detector**
The beam from the Remote Commander is received here.

[12] **CONTROL key**
Press this key to illuminate the keys and indicators on the front panel.
Press this key again to extinguish them.

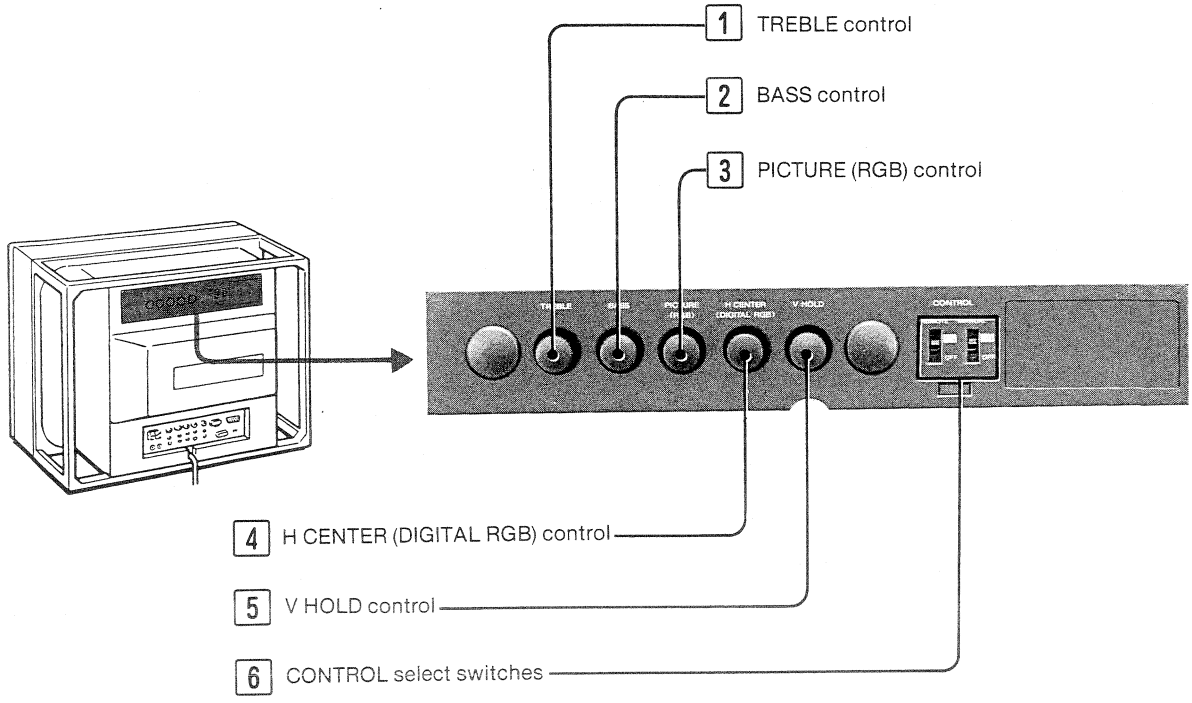
[13] **VOLUME control keys**
Press the + key to raise the volume or the – key to lower it.

[14] **PICTURE control keys**
Press the + key to make the contrast, color intensity and brightness stronger or the – key to make them weaker.

[15] **Input select keys**
LINE A, LINE B, VTR, AV, DIGITAL
Select the input source connected to the LINE A, LINE B, VTR, AV or DIGITAL RGB connector.
When a key is pressed:
• it blinks if the other indicators and keys on the front panel illuminate.
• it illuminates if they are extinguished.

Key illumination
For the keys [1] through [7], [13] and [14]:
• While each key is pressed, it blinks, indicating that adjustment is going on.
• During adjustment, if the adjustment value reaches the limit, the blinking speed becomes slower.

REAR PANEL


1 TREBLE control
2 BASS control
3 PICTURE (RGB) control
4 H CENTER (DIGITAL RGB) control
5 V HOLD control
6 CONTROL select switches

1 TREBLE control
Turn clockwise for more treble (high tone), or counterclockwise for less.

2 BASS control
Turn clockwise for more bass (low tone), or counterclockwise for less.

3 PICTURE (RGB) control
Adjust the contrast of the RGB signals connected to the AV connector or the DIGITAL RGB connector.

4 H CENTER (DIGITAL RGB) (horizontal centering) control
When the picture of DIGITAL RGB input is decentered horizontally, correct it with this control.

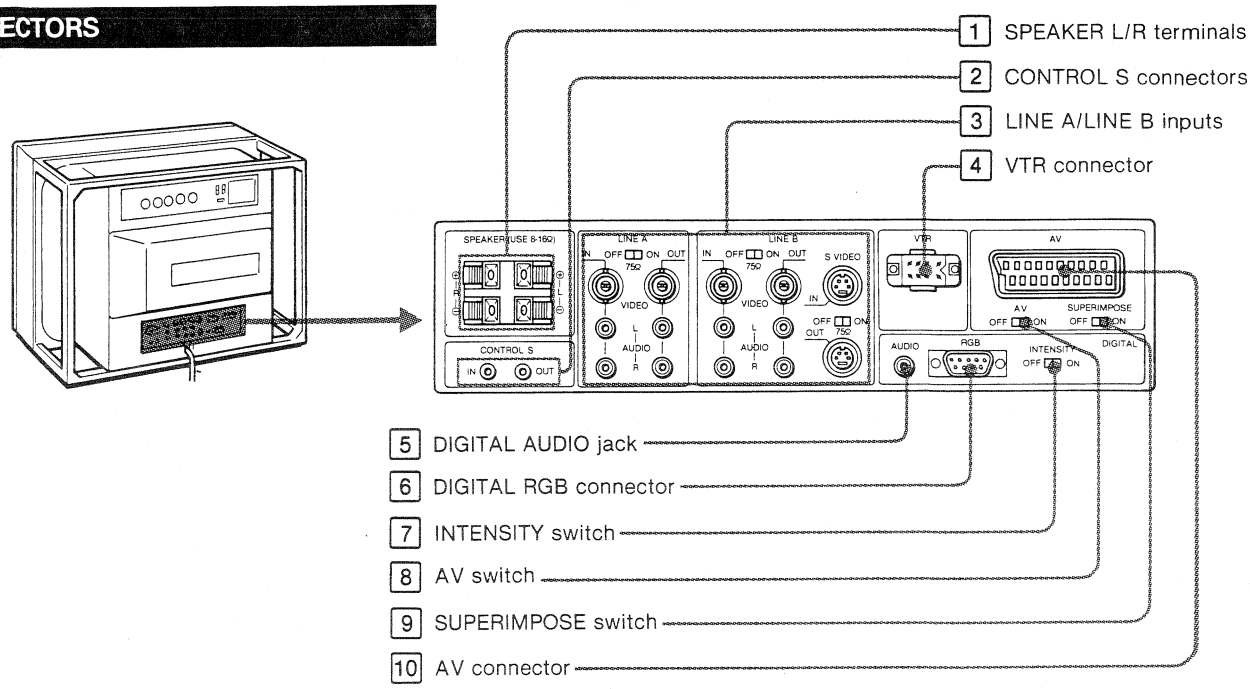
5 V HOLD (vertical hold) control
When the picture rolls vertically, correct it with this control.

6 CONTROL select switches
Normally set to ON.

REMOTE CONTROL switch
Set this switch to ON to control the monitor with a Remote Commander.
If this switch is set to OFF, the remote control is not possible.

MANUAL CONTROL switch
Set this switch to ON to control the monitor manually. To make the manual control of the control keys or switches on the front panel impossible, extinguish the indicators by pressing the CONTROL key on the front panel and set this switch to OFF.
(However remote control is possible if the REMOTE CONTROL switch is set to ON.)

CONNECTORS



1 SPEAKER L/R terminals
Connect to speakers with 8 to 16 ohm impedance.

2 CONTROL S IN/OUT connectors
Connect to the CONTROL S connectors of a VTR or another monitor.
It is then possible to control the whole system with a single Remote Commander.

3 LINE A/LINE B inputs

S VIDEO IN connector (4-pin, mini-DIN)*
VIDEO IN connector (BNC type)
AUDIO L/R IN jacks (phono jack)
Connect to the video and audio outputs of a VTR or a camera.

S VIDEO OUT connector (4-pin, mini-DIN)*
VIDEO OUT connector (BNC type)
AUDIO L/R OUT jacks (phono jack)
Loop-through outputs of the IN connector and jacks.
Connect to the video and audio inputs of another monitor.
*For LINE B only.

75-ohm termination switch
When only the S VIDEO/VIDEO IN connector is used (nothing is connected to the S VIDEO/VIDEO OUT connector), set this switch to ON.
When both connectors are used together for a loop-through connection, set this switch to OFF.

Note

The VIDEO IN connector is disconnected automatically when a cable is connected to the S VIDEO IN connector.

4 VTR connector (8-pin)
Connect to a VTR with an 8-pin TV connector.

5 DIGITAL AUDIO jack (phono jack)
Connect to the audio output of an audio source to listen to the sound from the connected audio source while viewing the picture from the DIGITAL RGB connector.

6 DIGITAL RGB connector (9-pin, D-sub)
Connect to the digital RGB output of a microcomputer.

7 INTENSITY switch
Normally set to OFF. When a microcomputer provided with intensity output is connected, set to ON for 16-color display.

8 AV switch
Set to ON so that the monitor is automatically switched to the AV input when a signal is input from the AV connector, taking priority over the LINE A, LINE B or VTR input previously selected by the input select keys on the front panel. Set to OFF to select the AV input manually by pressing the AV input select key.

9 SUPERIMPOSE switch
Normally set to ON.
Set to OFF to display the analog RGB signal from the microcomputer connected to the AV connector.

10 AV connector (21-pin)
Connect to the 21-pin multiconnector of an 8 mm video cassette recorder or the analog RGB multioutput connector of a microcomputer.

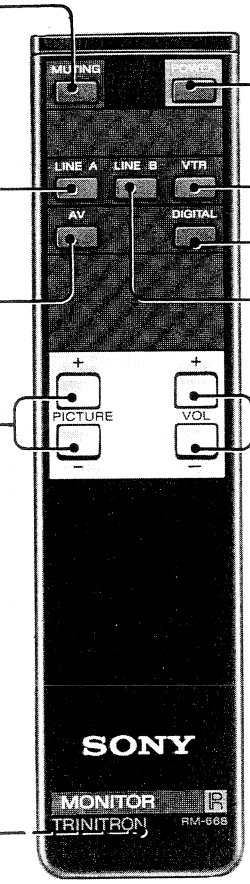
REMOTE COMMANDER

MUTING button
Press this button to mute the sound.
Press this button again to cancel muting.
• When muting is cancelled, the volume returns to the level before muting.

LINE A button * *

AV button * *

PICTURE control buttons *



POWER switch *

VTR button * *

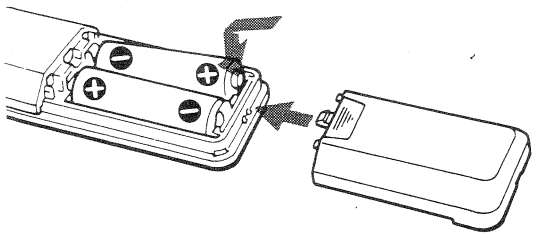
DIGITAL button * *

LINE B button * *

VOL (volume) control buttons *

* The function of these buttons is the same as those on the front panel.
* * To select LINE A, LINE B, VTR, AV or DIGITAL for the input source, press the corresponding button.

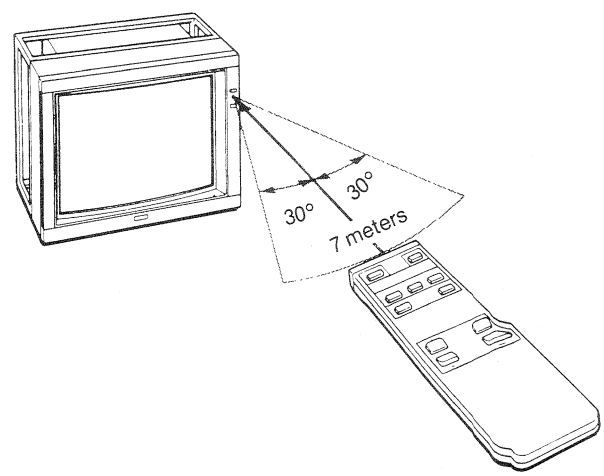
Battery compartment
Insert 2 R6 (size AA) batteries supplied with the correct polarity.



Notes

- In normal operation, batteries will last up to half a year. If the unit does not operate properly, the batteries might be exhausted. Replace all with new ones.
- To avoid damage from possible battery leakage, remove the batteries for extended unused periods.
- Be sure that there are no obstructions between the Commander and the TV.

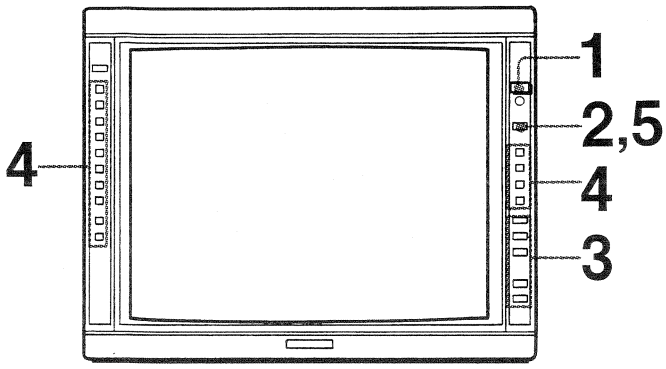
OPERABLE RANGE



OPERATION

For connections, see pages 10 to 13.

DISPLAYING THE PICTURE



1 Depress the POWER switch.
One of the input select keys illuminates.
2 Press the CONTROL key.
The selected input select key blinks and all control keys on the front illuminate.
(If the control keys do not appear, set the MANUAL CONTROL switch on the rear to ON.)
3 Press the desired input select key.
The pressed key blinks and the picture from the selected input is displayed on the screen and the sound is heard through the speakers.
(For selecting the AV or DIGITAL input, see "Notes on input selection".)
4 Adjust the picture and sound.
5 Press the CONTROL key to extinguish the control keys so that only the selected input select key illuminates.

SUPERIMPOSING

To superimpose the data from the microcomputer connected to the AV connector over the picture, proceed as follows. (The data should be processed for superimposition on the microcomputer.)

1 Set the SUPERIMPOSE switch to ON.
2 Press the LINE A, LINE B or VTR input select key to display the picture on which the data is to be superimposed on the monitor screen.
3 Press the AV input select key.
The data is superimposed over the picture.
4 Adjust the contrast of the superimposed data with the PICTURE (RGB) control.

Note

The data cannot be superimposed over the picture input from S VIDEO IN connector.

NOTES ON INPUT SELECTION

AV input and SUPERIMPOSE switch

Set the SUPERIMPOSE switch on the rear as follows, according to the signal supplied to the AV connector.

SUPERIMPOSE switch	Signal to be displayed
ON	• To display the composite video signal from an 8 mm video cassette recorder, etc. • To perform superimposition. (See "SUPERIMPOSING".)
OFF	• To display the analog RGB signal from a microcomputer, etc. In this case, the sync signal should be supplied to pin 20 of the AV connector.

- When the AV input select key is pressed with the SUPERIMPOSE switch ON, the previously selected LINE A, LINE B or VTR input select key blinks together with the AV key.
- When it is pressed with the SUPERIMPOSE switch OFF, only the AV key blinks.

AV input and AV switch

When the AV switch on the rear is set to ON, the monitor is automatically switched from the LINE A, LINE B or VTR input to the AV input if a signal is input to the AV connector.
Set the AV switch to OFF to select the AV input manually by pressing the AV input select key.

DIGITAL input

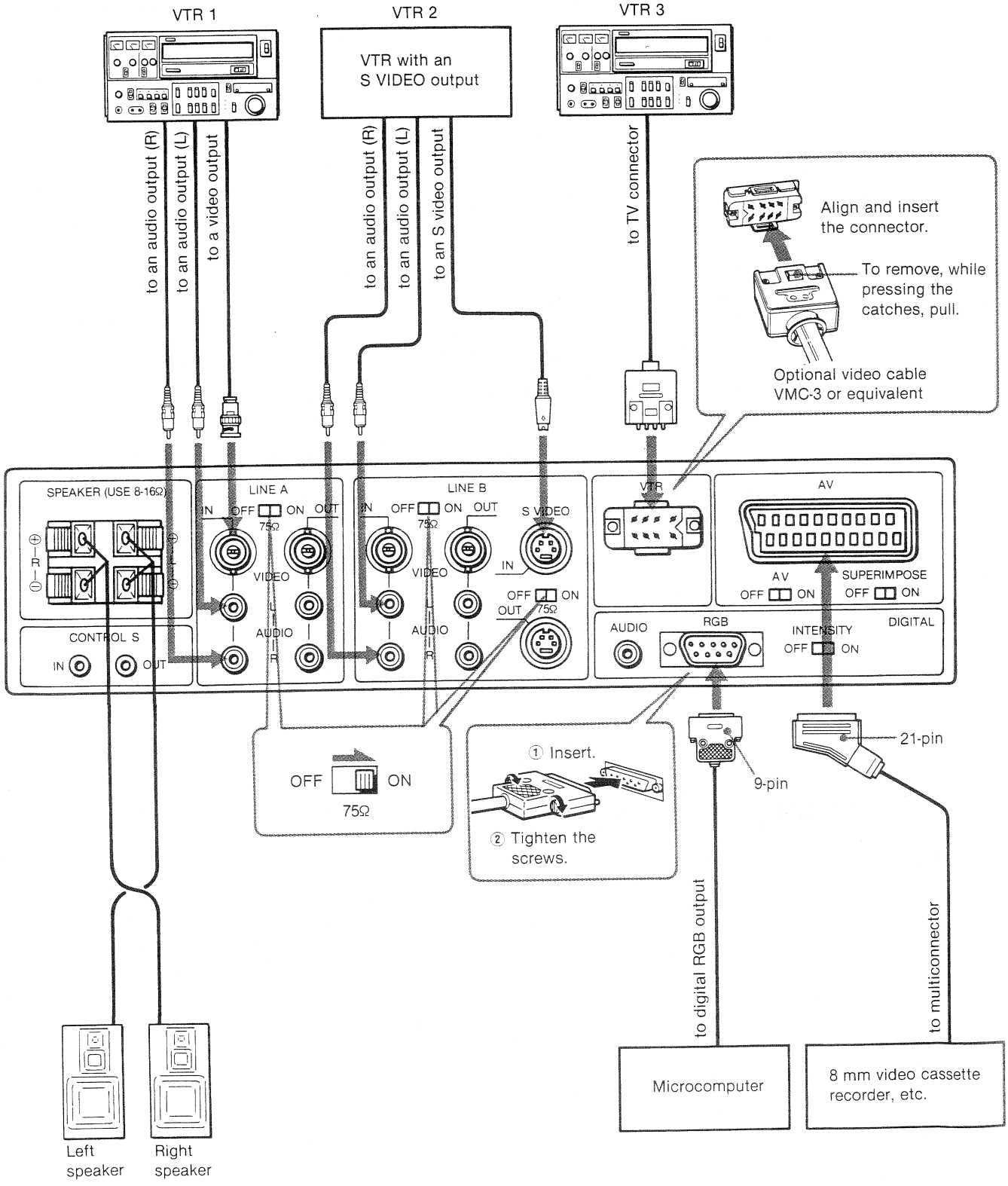
- To display the digital RGB signal from a microcomputer provided with intensity output in 16 colors, set the INTENSITY switch on the rear to ON.
- If necessary, center the picture from the DIGITAL RGB connector with the H CENTER control on the rear panel.

Note

The COLOR, HUE and SHARP control keys do not function when the DIGITAL input is selected or the AV input is selected with the SUPERIMPOSE switch OFF.

SYSTEM CONNECTIONS

CONNECTION DIAGRAM

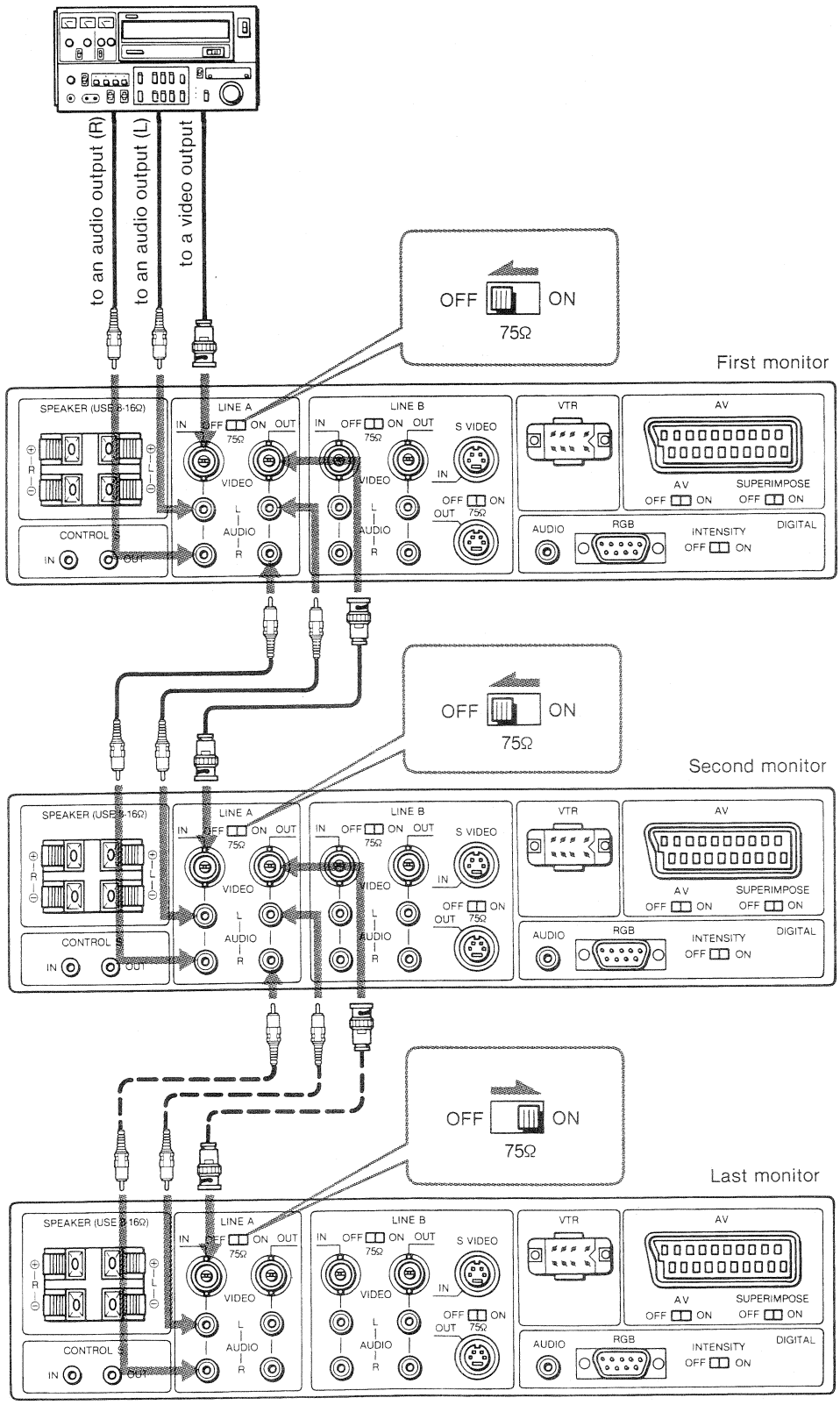


Note

- When a microcomputer has an analog RGB output connector, connect it to the AV connector.
- When a microcomputer has only a composite video output connector, connect it to the LINE A or LINE B VIDEO IN connector.

CONNECTING SEVERAL MONITORS

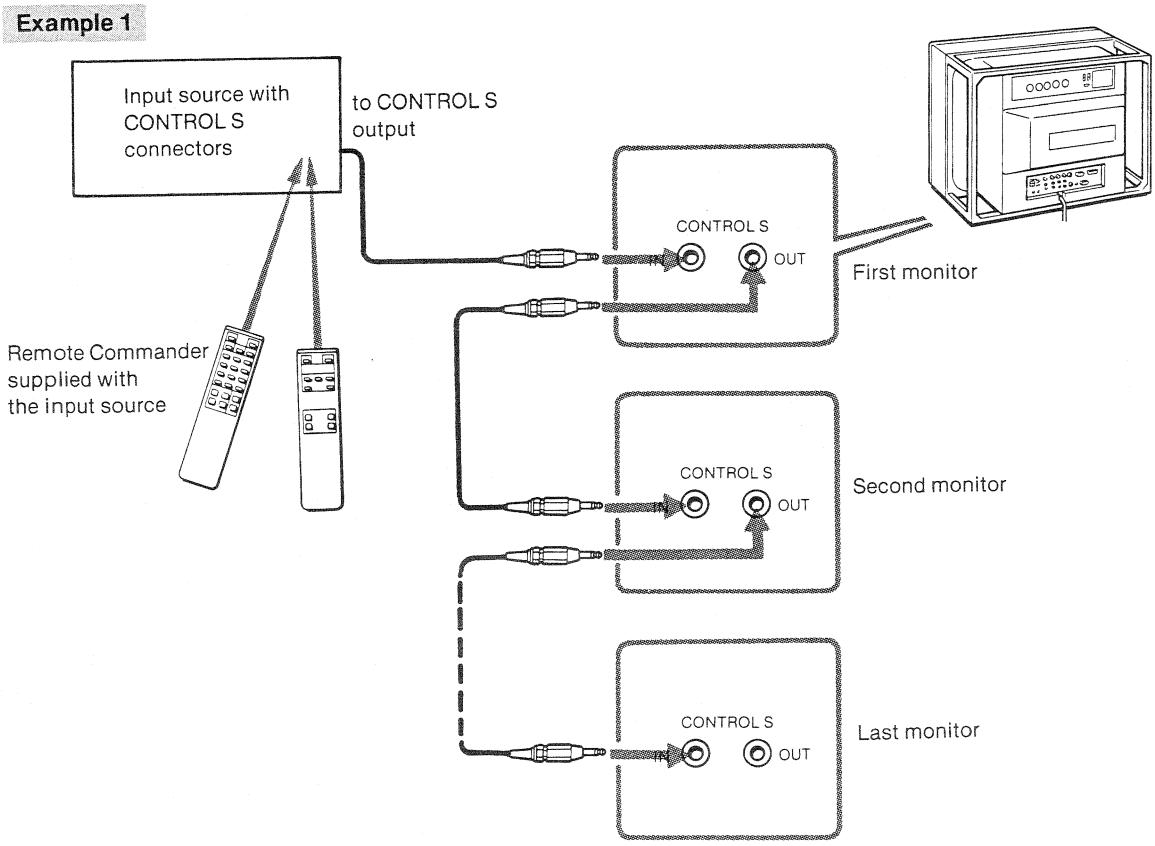
A loop-through connection is convenient for monitoring the same signal on the monitors. Up to 10 monitors can be connected. It is recommended to use a signal distributor when several monitors are connected.



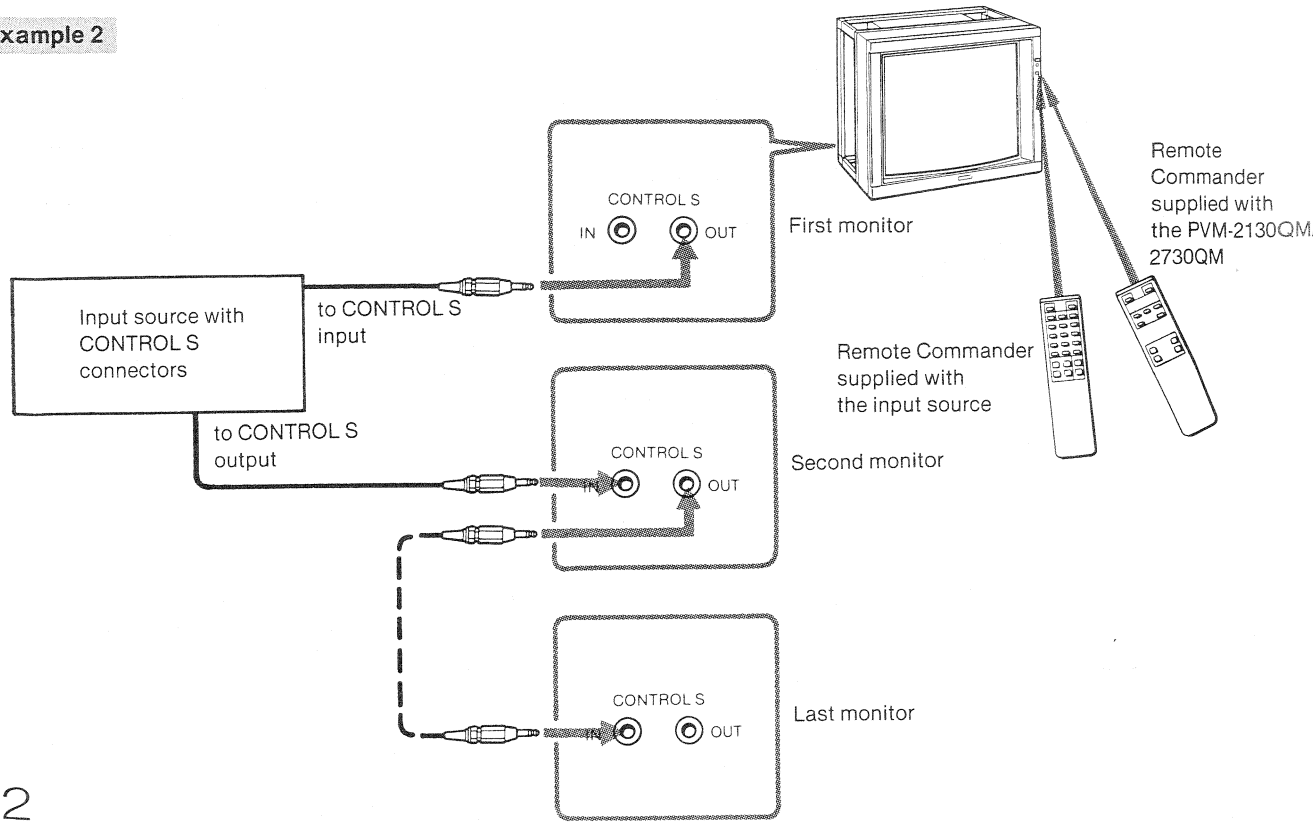
CONTROL S CONNECTION

The following connections allow remote control of several monitors and a VTR through a single monitor.

Example 1



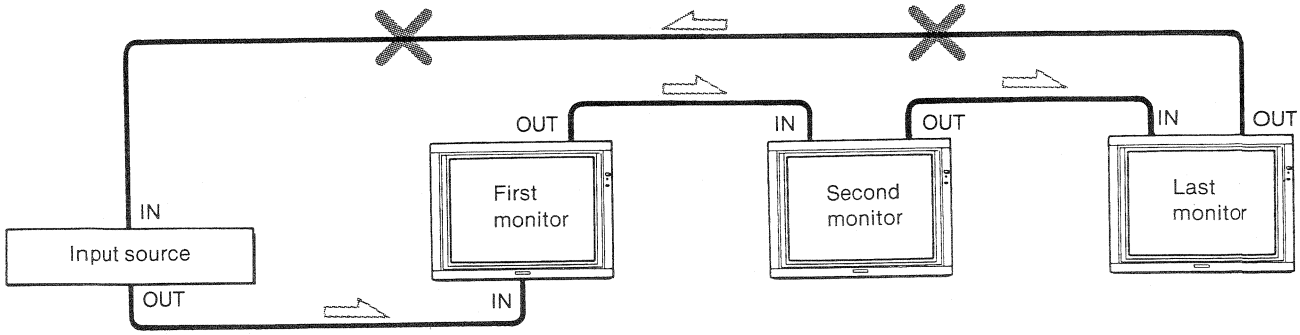
Example 2



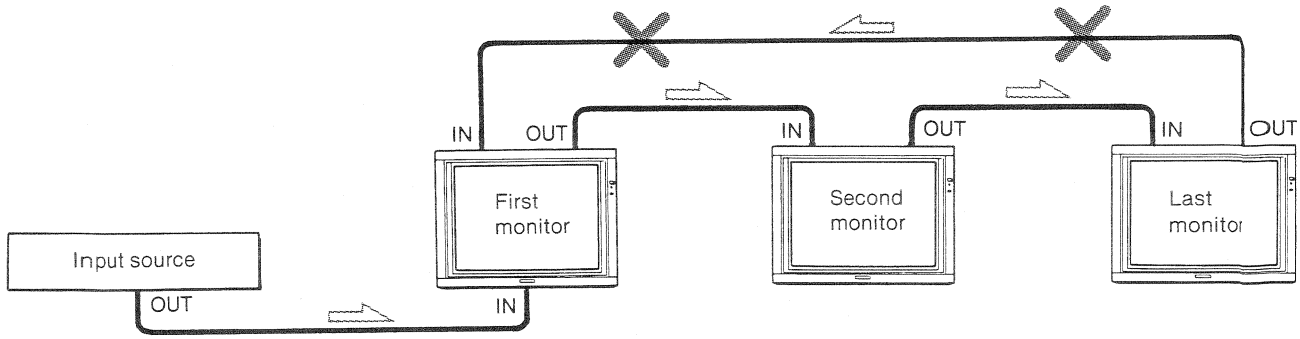
Note

Do not use the following loop connections.

Example 1



Example 2



CONTROL S signal flow

SPECIFICATIONS

Color system — PAL, SECAM, NTSC and NTSC$_{4.43}$ systems, switched automatically

Picture tube — Trinitron tube
PVM-2130QM:
Approx. 54.5 cm (21 inches)
(50.6 cm picture measured diagonally)
100-degree deflection, AG pitch 0.55 mm
PVM-2730QM:
Approx. 67.7 cm (27 inches)
(63.5 cm picture measured diagonally)
114-degree deflection, AG pitch 0.73 mm

Resolution — Video input: 420 TV lines
S video input: 560 TV lines
RGB inputs: 640 × 200 dots (2000 characters)

Color temperature — 9300°K

Frequency response — 10 MHz (–3 dB, RGB)
5 MHz (–3 dB, composite video)
6 MHz (–3 dB, S video)

Horizontal linearity — **PVM-2130QM:** Less than ±7%
PVM-2730QM: Less than ±5%

Vertical linearity — **PVM-2130QM:** Less than ±8%
PVM-2730QM: Less than ±5%

Line pull range — Horizontal: + 500 Hz
Vertical: –8 Hz

Overscan of the picture — Less than + 7%

LINE A/B, VTR inputs
S VIDEO: — 4-pin, mini-DIN
Y (luminance signal); 1 Vp-p, sync negative, 75-ohm termination switchable
C (chrominance signal); 300 m Vp-p (burst signal), 75-ohms
VIDEO IN: — LINE A/B: BNC connector
Composite video, 1 Vp-p ±6 dB, sync negative, 75-ohm termination switchable
VTR: 8-pin connector
Composite video, 1 Vp-p ±6 dB, sync negative, 75-ohm terminated
AUDIO IN: — LINE A/B: Phono jack
–5 dBs, more than 47 kilohms
VTR: 8-pin connector, –5 dBs, more than 47 kilohms

LINE A/B outputs (loop-through outputs)
S VIDEO: 4-pin, mini-DIN
VIDEO: BNC connector
AUDIO: Phono jack

Digital RGB inputs — RGB: D-sub 9-pin connector (See "Signal assignment".)
AUDIO: Phono jack
–5 dBs, more than 47 kilohms

AV connector — 21-pin connector (See "Signal assignment".)

Speaker terminals — 8 ohms

Control S input/output — Minijack, 5 Vp-p

Power output — **PVM-2130QM:** 7 W + 7 W at 8 ohms
PVM-2730QM: 15 W + 15 W at 8 ohms

Power requirements — 220 – 240 V AC, 50/60 Hz

Power consumption
PVM-2130QM: 140 W
PVM-2730QM: 175 W

Dimensions — **PVM-2130QM:**
Approx. 516 × 409 × 482 mm (w/h/d)
PVM-2730QM:
Approx. 653 × 508 × 492 mm (w/h/d)
incl. projecting parts and controls

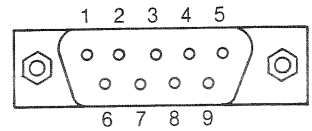
Weight — **PVM-2130QM:** Approx. 30.6 kg
PVM-2730QM: Approx. 52 kg

Supplied accessory
Remote commander RM-668, with 2 R6 batteries 1

Optional accessories
TV stand SU-538, SU540 (for PVM-2130QM)
SU-539, SU-541 (for PVM-2730QM)
Speaker system SS-X6A, APM-X5A

SIGNAL ASSIGNMENT

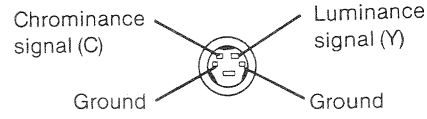
DIGITAL RGB connector
(D-sub 9-pin)



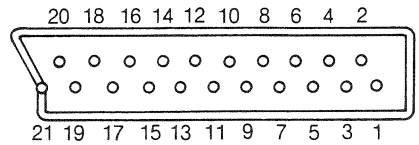
Digital signal (TTL level)

Pin No.	Signal assignment
1	Ground
2	Ground
3	Red input
4	Green input
5	Blue input
6	Intensity input
7	No connection
8	H. sync input (positive/negative)
9	V. sync input (positive/negative)

S VIDEO connector (4-pin mini DIN)



AV connector (21-pin)



Pin No.	Signal	Signal level
1	Audio output B (right)	Standard level: 0.5 Vrms Output impedance: Less than 1 k ohm *
2	Audio input B (right)	Standard level: 0.5 Vrms Input impedance: More than 10 k ohms *
3	Audio output A (left)	Standard level: 0.5 Vrms Output impedance: Less than 1 k ohm *
4	Ground (audio)	
5	Ground (blue)	
6	Audio input A (left)	Standard level: 0.5 Vrms Input impedance: More than 10 k ohms *
7	Blue input	0.7 V ±3 dB, 75 ohms, positive
8	Function select (AV control)	High state (9.5 - 12 V): Peri mode Low state (0 - 2 V): TV mode Input impedance: More than 10 k ohms Input capacitance: Less than 2 nF

Pin No.	Signal	Signal level
9	Ground (green)	
10	Open	
11	Green input	(Same as Pin 7)
12	Open	
13	Ground (red)	
14	Ground (blanking)	
15	Red input	(Same as Pin 7)
16	Blanking input	High state (1 - 3 V) Low state (0 - 0.4 V) Input impedance: 75 ohms
17	Ground (video output)	
18	Ground (video input)	
19	Video output	1 V ±3 dB, 75 ohms, positive Sync: 0.3 V (±3 dB)
20	Video input	1 V ±3 dB, 75 ohms, positive Sync: 0.3 V (±3 dB)
21	Common ground (plug, shield)	

* at 20 Hz - 20 kHz

Design and specifications subject to change without notice.

TROUBLESHOOTING

If these symptoms occur when you begin operation, follow the suggestions below.

SYMPTOMS	CORRECTIONS
No controllable keys although the POWER switch is turned on.	• Press the CONTROL key.
No indication appears although the CONTROL key is pressed.	• Set the MANUAL CONTROL switch on the rear panel to ON.
Remote control is not possible.	• Set the REMOTE CONTROL switch on the rear panel to ON.

If the problem still cannot be solved, contract your authorized Sony dealer.